

New Jersey Congestion Management System

- Proposed System Update -



Presentation to the ISIB

Prepared by: Bureau of Systems Planning

April 15, 2008 ~ Commissioner's Conference Room ~ 1:30 PM



Today's Objective

To demonstrate the **critical need** for updating New Jersey's Congestion Management System, through these topics:

- ▶ NJCMS Genesis
- ▶ NJCMS Today
- ▶ Current Demands on the Tool
- ▶ NJCMS Issues and Problems
- ▶ A "New Era" for Congestion Relief
- ▶ "New Era" On-Going Efforts for NJ
- ▶ Here's How We're Going To Do It
- ▶ Where We Now Stand
- ▶ Recommendation



In the beginning, the NJCMS was...

- ☐ Conceptualized as a result of 1991 ISTEA legislation (CFR Part 614 - need to establish Traffic Congestion Management System)
- ☐ Originally, only included State highways and major toll facilities
- ☐ A link-based system to “estimate” key congestion aspects of the system, using measures like v/c ratios and delay
- ☐ Initially used by the NJDOT and the MPO’s to evaluate capacity-adding projects (e.g.; major widenings), as identified in 23 CFR 450.320(b)

NJCMS Today



Network Coverage

Total Route Miles 3,478

Interstate 431

Urban Expressway 404

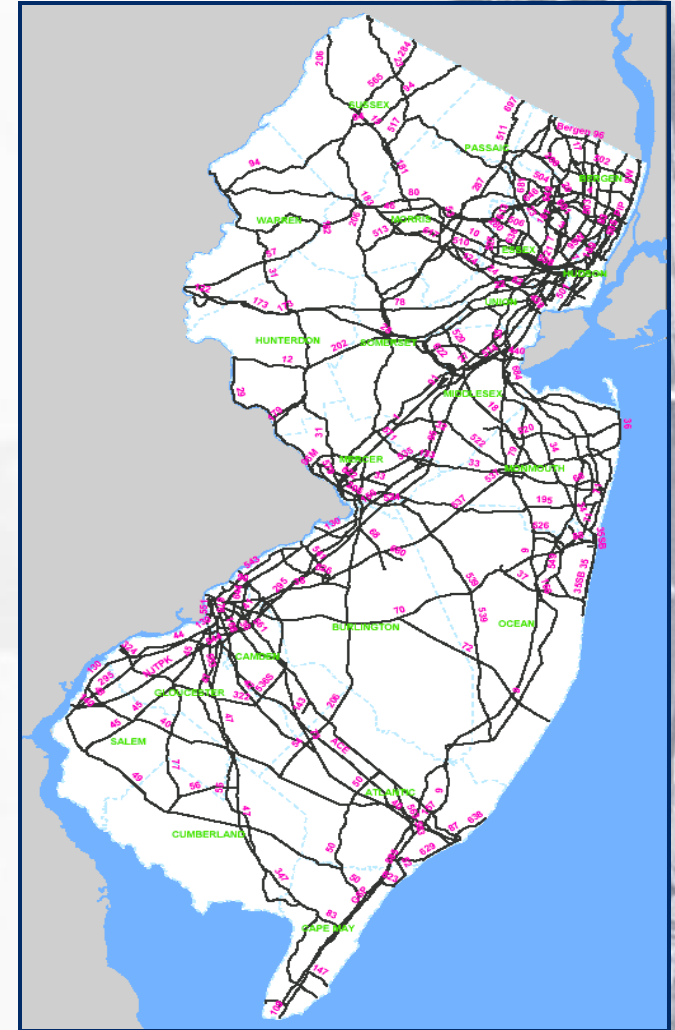
Principal Arterial 1,818

Minor Arterial 716

Collector/Local 109

Total # of Links 5,253

The NJCMS network has been expanded over time to include principal arterials (Co. 500 and some 600) and some key local roads, with updates to the underlying data and functionality.



Current Demands on the Tool

Over time, demands on the NJCMS tool have grown beyond its initial use (roadway capacity increase screening) to now include:

- “On-call” analyses for Front Office/Governor’s Office
- Tier I (Problem Statement Evaluation) screenings
- Tier II (Project Scoping) screenings
- Capital Program Project Rankings
- Capital Investment Strategy Support and Analysis
- CPC guidance for project decision-making
- “Cost of Congestion” quantification
- Problem Statement development (e.g.; Quick Fix, ITS)
- Strategic direction alignment
(Nationally ↔ Statewide ↔ Regionally)

NJCMS Issues & Problems

Although there have been on-going improvements and upgrades along the way, the current NJCMS has several shortcomings...

- Outdated information
- Antiquated interface
- • Incomplete network structure
- Processing problems
- • Incomplete functionality
- • Antiquated data output/reporting
- Lack of up-to-date documentation

→ - Key Aspect

NJCMS ~ Current Issues & Problems (Examples)

Following are specific examples of some of the issues and problems...

- Old volumes, incident data and travel time data
- Limited, basic Windows® interface
- • Lack of network “nodes” (intersections & interchanges)
- Certain processed output records become “missing”
- • Does not address seasonality (recreational traffic), weak on transit
- • Summary reports not “targeted” to current needs (e.g.; Tier I and Tier II screenings)
- Documentation now 4 years old, and does not include recent improvements

→ - Key Aspect

A “New Era” for Congestion Relief

The vision & strategic direction for congestion relief have significantly evolved, both at a National, State and Regional level...



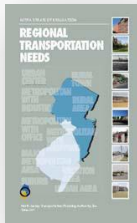
- **USDOT’s Congestion Initiative...strong focus on:**

- Bottlenecks, ITS, congestion-pricing, cost-effective transit (BRT) and lane management;



- **NJDOT’s Congestion Initiative...recommendations for:**

- Transit improvements, selective widenings of strategic roadways, breaking bottlenecks, new technologies, optimize freight, reduce travel demand;



- **MPO’s Federally-mandated Congestion Management Process:**

- Need for technical support and coordination between the Department & MPO’s with their respective congestion programs.

“New Era” On-going Efforts for New Jersey



To meet these 21st century needs, there are a number of on-going efforts related to the NJCMS, such as...

- ➔ • Mainline Bottleneck Screening Protocol
- ➔ • NJ Highway Interchange Survey
- ➔ • Signalized Intersection Analysis Process
- NJ Incident Rates Development
- NJ Travel Times Development
- ➔ • Cost of Congestion Tool - Phase II
- Seasonal Adjustment Factor Development

*** Virtually all of these (eventual) products will need to be integrated into the CMS tool ***

➔ - Key Aspect

The New Jersey Congestion Management System Needs to Become...



CMS-21
21st CENTURY CONGESTION SOLUTIONS

- Proposed System Update -

Here's How We're Going to Do It

The Final CMS-21 SOW will include the following tasks (to the extent possible)...

- ➔ • Establish Steering Committee, develop Vision Plan;
- ➔ • Revamp user interface for more robust functionality;
 - Program fixes;
- ➔ • Update network topology, add automated updating;
- ➔ • Integrate “New Era” elements, as possible;
 - Enhance traffic forecasting capabilities;
- ➔ • Automate project congestion priority rankings;
- ➔ • Targeted congestion measure integration (e.g.; real-time delays).

➔ - Key Aspect

Where We Now Stand...

Here's the bottom line...

- The NJCMS Update (**CMS-21**) is **MUCH MORE** than a “data refresh”
- The SOW/RFP posting has been delayed for a year
- On-going delays are jeopardizing funding and timely product rollout

Without the Update, it will be...

- Difficult to provide targeted, easy-to-understand congestion evaluation of the system that is in line with current/future need
- Difficult to generate problem statements
- Difficult to provide project-level congestion evaluation
- Difficult to update (via SLD)
- Impossible to integrate “New Era” elements
- Impossible to integrate real-time data from Traffic Ops.



“Green ● Light” **The** **Congestion Management System** **Update**



Question & Answer

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